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INCORPORATING THE FEEDBACK OF COMBAT VETERANS
WITH POST-TRAUMATIC STRESS DISORDER IN THE CONSTRUCTION OF
A SLEEP DISORDERS INVENTORY

Master's Thesis

Presented to
The Faculty of the Department of Psychology
The College of William and Mary in Virginia

In Partial Fulfillment
of the Requirements for the Degree of
Master of Arts

by
Stase Mikalajunas Michaels

1995

APPROVAL SHEET

This thesis is submitted in partial fulfillment of
the requirements for the degree of

Master of Arts

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Abstract

A sleep disturbance scale for PTSD is needed to examine etiology and formulate therapeutic interventions. In a previous study (Michaels, 1994), a Daily Sleep Disturbances Inventory (DSDI) was developed using an adapted phenomenological method and was compared to an existing questionnaire, the Sleep Disturbances Inventory (SDI) of Inman, Silver and Doghramji (1990). In that study, a between-subjects design found no differences between questionnaires regarding how well each described the sleep disturbance experience of combat veterans with PTSD. In the present study, a within-subjects design found a preference for the DSDI, suggesting that it has greater phenomenal validity than the SDI. In order to improve the DSDI, the present study also used phenomenal validity to identify individual questions that could be problematic. Methods used to identify and improve problem questions are described.

Incorporating the feedback

Running Head: INCORPORATING THE FEEDBACK OF COMBAT VETERANS

INCORPORATING THE FEEDBACK OF COMBAT VETERANS
WITH POST-TRAUMATIC STRESS DISORDER IN THE CONSTRUCTION OF
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Trauma emerges from three sources: individual trauma such as rape or incest (Binder, 1981); civilian disasters such as fire and floods (Gleser, Green and Winget, 1981); and combat (Figley, 1978). The DSM III-R (1987) lists "re-experiencing" of the trauma as one of the four criteria required in the diagnosis of Post-Traumatic Stress Disorder (PTSD). The nightmare is the most common way in which this re-experiencing of imagery occurs (Blanchard, Kolb, Pallmeyer and Gerardi, 1982; Boulanger, Kadushin and Rindskopf, 1986; Malloy, Fairbank and Keane, 1983). In acute PTSD, nightmares can persist indefinitely (Figley, 1978; Rosen, Reynolds, Yeager, Houck and Hurwitz, 1991; Peters, van Kammen, van Kammen and Neylan, 1990), creating marked sleep disruption and affective imbalance (Hartmann, 1984).

Eighty-five percent of those with chronic PTSD suffer from regular traumatic nightmares and accompanying sleep disruptions which persist despite various attempts at treatment (Birkhimer, DeVane and Muniz, 1985; Hartmann, 1984; Kaminer and Lavie, 1991; Goldstein, Van-Kammen, Shelly, Miller and van Kammen, 1987). As a key symptom of PTSD, numerous researchers speculate that sleep disturbances may sustain the pathology of PTSD (Blitz and Greenberg, 1984; Boulanger et al., 1986; Kramer, 1979; Kramer, Kinney and Scharf, 1982). Therefore gaining an understanding of sleep disturbances is an integral part of understanding PTSD.

Though the phenomenon of marked sleep disruption in PTSD has been observed and discussed for some time (Ross, Ball, Sullivan and Caroff, 1989; Saigh, 1992), therapeutic interventions designed specifically for this type of sleep disorder have not yet emerged (Brett and Ostroff, 1985; Ross et al., 1989; Saigh, 1992). Attempted interventions have been carry-overs from treatments of other psychological disorders, as for

example, relaxation training and behavior therapies (Cautela, 1972; Wolpe, 1969), desensitization (Leuner, 1962; Cavior and Deutsch, 1975), hypnotherapy (Baker, 1981, 1982, 1983), exposure therapy (Richards and Rose, 1991), rehearsal (Kellner, Singh, and Irigoyen-Rascon, 1991), and individual, group, and psychotherapy (Shipko, Alvarez and Noviello, 1983; Defazio, 1978). Such approaches, as well as pharmacotherapy treatments (March, 1990) have proved helpful in the treatment of PTSD; however, they only marginally or inconsistently alleviate sleep disturbances (Ross et al., 1989; Saigh, 1992). It is the premise of this author is that one major reason for the slow progress of successful therapeutic applications for sleep disturbances has been the lack of data, quantitative and qualitative, to delineate the exact characteristics of sleep disturbances as they relate to PTSD. This study is an attempt to create a sleep disturbances scale that could gather such data.

Existing Sleep Disturbances Scales

Three questionnaires are currently in use to assess sleep disturbances in normal and abnormal populations: (1) the Pittsburgh Sleep Quality Index (PSQI) (Buysse, D.J., Reynolds, C.F., Monk, T.H., Berman, S.R. and Kupfer, D.J., 1989); (2) the Nightmare Frequency Scale (NFS) (Belicki, 1992); and (3), the Sleep Disturbances Inventory (SDI) (Inman, Silver and Doghramji, 1990).

In the present author's opinion, developing a new questionnaire is appropriate because the three scales share major limitations. First, they are all retrospective reports (either one month or one year). Recent studies indicate that retrospective, versus daily reports of sleep disturbances show items to be under-reported by a factor of from 2.5 times (Wood, J.M and Bootzin, R.R., 1990) to as many as 10 times the retrospective numbers reported (Salvio, M.A., Wood, J.M., Schwartz, J. and Eichling, P.S., 1992). Secondly, retrospective scales cover questions in broad, rather than specific terms. Finally, although two of

the three scales have been used with PTSD populations, only one, the SDI, was developed to expressly assess the sleep disturbances of PTSD.

More specifically, because the PSQI originated in a sleep disorders laboratory with a focus on physiological correlates of sleep disorders in the normal population, most questions relate to physical disturbances such as snoring, body movements, coughing, breathing lapses, and cold sensations. Few questions gather information about psychological correlates of sleep disturbances or their possible origins, as would be necessary for the study of the sleep disorders of a PTSD population. In a study using the PSQI, one of the comparison groups included Holocaust victims (Buysse et al., 1989; Rosen et al., 1991); however, they were not pre-tested for symptoms of PTSD, so that the scale has not been tested with PTSD groups. The PSQI does have some descriptive value for showing overall differences between groups, regarding features such as frequency of reported awakenings, length of sleep and numbers of bad dreams. However, it does not give detailed information regarding specific, unique features related to PTSD, which distinguish the PTSD group from other populations.

Similar to the PSQI, the NSF has been tested on a great number of subjects in the normal population, mainly college students (Belicki, 1985; Belicki and Belicki, 1986; Belicki 1992). It furthers our understanding of nightmare frequency and its relation to cognitive style in the normal population. Because some of its questions, particularly those related to nightmares, can apply to disturbed populations, its use is potentially adaptable for the PTSD population (Belicki, 1987). However, the questionnaire consists of only 12 questions, of which only half or less directly address aspects related to a disturbed population; thus its scope is too limited to supply the qualitative and quantitative information which is presently needed for understanding the sleep disturbances of the PTSD population.

In contrast to the PSQI and the NFS, the SDI was created by clinicians working in the field of PTSD as a measurement of sleep disturbances; therefore its questions are intended to be relevant for the PTSD population. It asks 57 questions that cover a wide range of information about sleep disturbances, physiological as well as psychological in nature. One of its shortcomings, as discussed above, is in its being a retrospective survey, with the problem of under-reporting of frequency of sleep disturbances still at issue (Wood, J.M and Bootzin, R.R., 1990; Salvio, M.A., Wood, J.M., Schwartz, J. and Eichling, P.S., 1992). A second shortcoming is that it asks questions in broad, rather than in specific terms. For example, it describes whether a person "wakes up during the night" sometimes, often or very seldom (descriptive correlates on its 1-7 point scale), but it does not tell us how often a person with PTSD actually wakes up during the night.

As the first attempt at a questionnaire specific to the sleep disturbances of the PTSD population, the SDI's major usefulness has been in supplying descriptive data showing differences between the PTSD population and other populations characterized by marked sleep disturbances (Inman et al., 1991). Their initial work showed that the PTSD population, in comparison to a general insomnia group without PTSD, had more anxiety, agitation and body movements associated with insomnia, nightmares which are more repetitive and more disruptive of a return to sleep, and more daytime fatigue and anxiety. This is a valuable comparative analysis; however, because participants responded on a 1-7 point scaling system rather than with details of frequency of the disturbance, the data lacks specificity. That is, it tells us that those with PTSD have nightmares which are more repetitive and disruptive to sleep than the insomniac group, but it does not tell us how many nightmares the PTSD group had in comparison to the insomniac group.

Present Study

A sleep disturbances inventory specific to PTSD in combat veterans is needed to examine etiology and formulate interventions. As a step towards its development, the present study evaluated two inventories: the Sleep Disturbances Inventory (SDI), given as a one-month retrospective (Inman, Silver and Doghramji, 1990) and the Daily Sleep Disturbances Inventory (DSDI), which asks questions about the previous night (Michaels, 1994). The evaluation attempted to determine the best elements of the SDI and the DSDI, with a view to developing a third inventory that combines the best features of each.

Michaels (1994) developed the DSDI using extracts from personal journal entries of those with PTSD to compile a new range of questions that ask questions only about the previous night. Michaels (1994) then examined the phenomenal validity of the DSDI in comparison to the SDI by evaluating how well each reflected the sleep disturbance experience. The combat veterans with PTSD who acted as participants did not distinguish between the two inventories and rated both as only just above the mid-point on a scale of how well it allowed them to describe their disturbances, suggesting that both could use improvement. The study showed significant correlations that suggested the questionnaires omitted important aspects of their experience, and irrelevant items detracted from how well the questionnaires described their experience.

Improvements. The present study improves on the previous study (Michaels, 1994) in three respects: (a) a larger, more representative sample, (b) a within-subjects design to compare the two questionnaires, and (c) more specific information on the relevance of items and on what is missing from the point of view of the patients. To make the sample more representative, participants were drawn from two VAMC locations, offsetting pre-selection factors used as criteria for entrance into a PTSD program at one location, such as higher or lower levels of PTSD symptoms. In the previous study, a between-subjects design was used to compare the two questionnaires. A within-subjects design is a

statistically more powerful method for determining the strengths and weaknesses of each questionnaire. In the previous study, participants gave feedback regarding only the overall features of the two questionnaires. In the present study, participants gave additional information regarding the importance of each question on each inventory.

Phenomenal validity. The present study uses the criterion of phenomenal validity as developed by Watson and Welch (1992) to assess how well the two questionnaires reflect the sleep disturbance experiences of those with chronic PTSD, as they themselves perceive it. Three questions on a postquestionnaire developed in a previous, related, study (Michaels, 1995) are used. The three questions represent a quantified method of analysis of phenomenal validity and examine the following criteria: (1) how well the questionnaire describes the overall experience of sleep disturbances, (2) whether any aspects were missed, and (3), how much on the questionnaire was not essential. In addition, in order to assess the phenomenal validity of individual questions, respondents rated how well a question assessed an important element related to how they have slept since their combat experience.

This method of analysis enables us to obtain systematic feedback regarding how well the DSDI questionnaire reflects the sleep disturbances of those with PTSD from their own point of view. The DSDI was itself developed based on an adapted phenomenological method using the personal journal entries of those with PTSD-related sleep disturbances (Michaels, 1994). Thus, this method of analysis represents a continuation of an approach that allows the researcher to determine the validity of the instrument from the perspective of the person to whom it applies. Establishing the phenomenal validity of an instrument is not viewed as a substitute for establishing predictive validity. Rather, it is viewed as a desirable step that precedes the establishment of predictive validity, a step which may increase the predictive validity of the questionnaire. Determination of predictive validity would be done at a later part in the development of the questionnaire.

Method

Participants

Participants were 38 male subjects, their age range (44 - 62) approximating that of the previous study (Michaels, 1995), all of whom are combat veterans diagnosed with PTSD. They met the following requirements: (1) diagnosis according to DSM III-R criteria for PTSD, based on a structured interview carried out by a clinical psychologist at the VAMC; (2) an MMPI profile fitting the patterns most commonly found in PTSD (Fairbank, J.A., Keane, T.M. and Malloy, P.F., 1983); (3) a score of greater than 30 on the PTSD subscale of the MMPI (Keane, T.M., Malloy, P.F. and Fairbank, J.A., 1984); (4) being drug-free and alcohol-free for a period of at least 3 months prior to participation in the study. All were either residents or out-patients of a PTSD Unit at either the Coatesville, PA, VAMC or the Hampton, VA, VAMC. Medications taken for sleep disturbances were recorded.

Participants averaged 11.5 months in combat, and 3 years being drug and alcohol free. On a preliminary questionnaire, they classified themselves as having "very high" levels of nightly sleep disturbances (4.4 average rating on a 1 - 5 point scale).

Materials

The DSDI. Using an adapted phenomenological method, Michaels (1994) extracted themes from journal entries of those with PTSD-related sleep disturbances; the themes were then formulated into questions. The DSDI is composed of 40 questions which ask for specific and detailed information regarding the sleep patterns of the participant's previous night of sleep. The DSDI is included in full as Appendix A.

SDI. Based on clinical observations, the one-month retrospective questionnaire of Inman et al. (1990) contains 57 questions related to sleep disturbances posed mainly in the form of, "In the past month, on the average, how many times did you...?" Responses are given as a rating

on a seven-point scale ranging from Never to Always. The SDI is appended in full as Appendix B.

Post-Questionnaire. The Post-Questionnaire contains three major questions that ask a participant to assess how well each questionnaire reflects his sleep disturbance experience. The questions state: (1) How well did the questionnaire allow you to describe your experience of sleep and its effects on you? (Descwell); (2) To what extent did the questionnaire miss aspects of your experience of sleep and its effects on you? (Miss); and, (3) How much of this questionnaire asked about things that are not essential to your experience of sleep and its effects on you? (Not-essential). Question 1 is considered the major question of appraisal. Questions 2 and 3 were designed as aspects of Question 1 to pinpoint what fails if an inventory does not capture a participant's experience. Participants marked responses on a seven-point scale ranging from "Not at all" to "Completely". Space was also included for open-ended descriptions regarding what is missing or not essential. The Post-Questionnaire is included as Appendix C.

Evaluation of each question. Question 3 of the Post-Questionnaire was adapted to evaluate each question on the DSDI and the SDI, as: "To what extent does this question get at something important in how you have slept since your combat experience?" Responses are ratings on a seven-point scale ranging from Not at All Important to Extremely Important. In addition, in order to maximize the feedback per question, a second, open-ended question was asked for each question: "If this question is important to you and it can be improved, state how." Thus, for each question, a response is available regarding its importance to the participant, and if any question contains missing elements or is stated inadequately, the participant had the opportunity to suggest an alternative and pinpoint what is inadequate. Such a dual format provides as wide a range of feedback as is possible, and thus provides detailed feedback important to the formation of a new, improved questionnaire.

Procedure

Before answering each questionnaire, subjects were asked to write a brief description of their overall sleep disturbance patterns. This brief journal portion gave each subject a baseline of observations of their own sleep disturbance patterns, on which they could base their subsequent assessment of each questionnaire (the SDI or the DSDI). This ensured that they focused on their own experience of sleep disturbances before answering questions. Participants were asked to keep their sleep patterns in mind as they responded to the Post-Questionnaire, thus allowing them to respond with more clarity.

Next, participants were asked to fill out both the SDI and the DSDI. To control for order effects, half of the subjects first filled out the SDI, then the DSDI, the other half, the reverse. Immediately following the completion of a questionnaire, each participant completed the Post-Questionnaire, designed to assess how well the questionnaire reflected the subject's experience of sleep disturbances. Before completing the second sleep disorders questionnaire, a subject was given the option of a 5 minute break, if desired, and was asked to re-read their journal entry about their overall sleep patterns.

Participants were invited to take part in the study by a staff psychologist at the VAMC. Those who participated had the project described to them in broad terms. They were warned of a small but distinct possibility that the focus on sleep disturbances demanded by this study might stir emotional reactions. However, they were also reassured that should such reactions occur, medical attention will be available, and they could drop out of the study at any time. All details regarding the project's overall purposes, the participant's role, and how medical services could be obtained should they be required, was summarized on the Consent Form. At the end of the study, participants were given a debriefing session.

Verbatim instructions. "As part of a research project, we'd like to try to assess your sleep disturbances. We're doing this so that in the long run, we may help people overcome these disturbances. But before we can help, we need to gather information about what the disturbances are, and how they affect a person."

"To do this, we'll first ask you to write a journal entry describing your personal experience of sleep and its effects on you. You can write down whatever you notice about how you sleep, and how that affects you. Then we'll ask you to fill out two questionnaires about your sleep patterns. After each questionnaire, there are 5 questions that allow you to give your opinion on how well the questionnaire matches what is going on for you, in terms of sleep. It may take you anywhere from 1 - 2 hours to fill these out."

"The questions are only about sleep disturbances and how they affect you, as for example, how long you sleep and how you feel the next day. Questions are asked only to try to get as good a picture as possible about your sleep patterns; they are not intended to pry into your life in any way, or to look beyond the question of your sleep patterns. All of your responses will be strictly confidential and will not be added to or included on any of your Veterans Affairs records. Anything you say or record is only for the purpose of this study, and will not be used for anything else."

"Answering some of these questions may bring your sleep disturbances to mind more sharply than usual, and make it somewhat more uncomfortable than usual for you. However, because the questions cover what you are likely experiencing regularly already, we don't expect any serious reactions. Someone will be at hand as you fill out the questionnaires to whom you can refer, as you wish to or need to. If you begin to feel especially anxious at a later time due to emotional reactions, you will have the name and number of someone whom you can contact for help."

"If you decide to, you can drop out at any time, for any reason, and it will not be held against you. If you decide to drop out, you will be asked why you did so, not to hassle you, but because it is important for us to know whether it was something in the project itself that triggered this, or whether it was not related to the project. But it's o.k. to drop out, if you need to."

"Participating may help you understand your sleep patterns a little better. And it might help all of us in the long run, to find relief for them. If you proceed, I'll ask you to fill out this "Consent Form". It explains the project and tells you whom to contact if you have questions or problems along the way. At the end of the project, someone will ask you how you felt about it and if you have any considerations about the project. If you are interested in what the researchers learn as a result of your participation, a summary of results will be sent to you a few months later."

"Do you have any questions?"

Once questions were answered and an intention to proceed was given, the subject was asked to read and sign the consent form. The researcher and participant then jointly set a date for their participation. The interview ended with the researcher thanking the subject for his participation, or for at least considering to participate in the project.

The patient was forewarned twice that unforeseen, but minimal, possibilities of negative reactions might take place due to placing a stronger focus on their sleep disturbances during the experimental period. It was first addressed in the verbatim instructions; at the same time, the patient was reassured that if he proceeded, he would have access to a name and telephone number of someone whom he could contact at any time of day or night. The same question was also addressed on the Informed Consent sheet, which gave the name and telephone numbers of those a patient could turn to for help. In the event that a negative

reaction occurred, the patient would immediately receive individual counseling, and if necessary, medication, as required. Because all subjects were patients at a VAMC, they had immediate access to all medical facilities, and could immediately make use of them in the event of reactions during this study.

Verbatim debriefing. Once all materials were completed, the participant was asked to share how he feels, and asked if there were any questions or considerations he would like to bring up. The researcher took note of the person's emotions and state of mind, and evaluated whether the participant was undergoing levels of anxiety or reactions that required a therapist's attention. The researcher allowed the participant to speak openly, if he so desired, till there was a sense that the subject was more or less in the same state of mind and emotions as he had been when he began. The participant was debriefed with these closing remarks:

"Due to your help, we now have good information regarding what is important to you on a questionnaire. This will enable us to put a new one together that is the best it can be. You likely noticed that there were two questionnaires, each asking questions in a different way. Comparing what you think of each of them, and how they reflect your experience, will enable us to take the best of both to form a new sleep disturbances questionnaire. Your input has been very valuable. Thanks."

Results

Between Questionnaires

A 2(Questionnaire: SDI, DSDI) X 2(Order of Questionnaires) X 2(Location) multivariate analyses of variance with repeated measures on questionnaire was done on the three postquestionnaire questions, Describes Well, Missed and Not-essential. The multivariate analysis showed a main effect for questionnaire ($F(3, 32) = 14.58, p < .001$).

There were no order effects, no effects for difference of location, and no interaction effects.

Univariate analyses revealed a main effect for questionnaire on Describes Well ($F(1,34) = 40.00, p < .001$) indicating that the DSDI was rated higher than the SDI. A main effect for questionnaire on Not-essential ($F(1,34) = 32.67, p < .001$) indicated that the DSDI was rated as having more questions that were not essential than did the SDI. Means and standard deviations of the postquestionnaire questions are reported in Table 1.

Insert Table 1 about here

On the SDI, the main question Describes Well correlated negatively with Missed ($r(37) = -.52, p < .001$) and positively with Not-essential ($r(37) = .56, p < .001$), whereas on the DSDI Describes Well correlated only with Not-essential ($r(37) = .38, p < .02$). The intercorrelations of the postquestionnaire questions are presented in Table 2.

Insert Table 2 about here

Individual Questions on the DSDI

Means of individual questions on the DSDI were compared to the grand mean of the DSDI questions (grand mean $\bar{X} = 5.50$; average $SD = 1.57$). For no question did the mean fall more than 1/2 standard deviation below the grand mean. The means and standard deviations of the DSDI questions that were separated out are summarized in Table 3.

Insert Table 3 about here

Pearson correlations also were done between the three postquestionnaire questions Describes Well, Missed, Not-essential, and

each individual question of the DSDI (40 questions). Five DSDI questions showed a significant correlation with Describes Well, one question with Missed and one question with Not-essential. Correlations, means, and standard deviations for these questions are reported in Table 4.

 Insert Table 4 about here

Discussion

Results showed a preference by participants for the DSDI's ability to reflect their overall experience of sleep disturbances more than the SDI. In this respect the DSDI, which was developed using an adapted phenomenological method, has greater phenomenal validity than the SDI, which was developed through clinical interview and observation. On the other hand, in comparison to the SDI, respondents rated the DSDI as having more elements that were not essential to their experience; this suggests the DSDI contains more irrelevant questions than does the SDI. The lack of significance on the question relating to what is missed indicates that the inventories do not differ on the degree to which they leave out essential aspects of experience.

In examining the comments respondents gave on the open-ended parts of each question on the postquestionnaire, the highest number were given for what was missed on each questionnaire, only a few comments were given for what was not essential, and there were no comments for the component describing how well each questionnaire allowed the participant to describe his experience. Respondents were very clear on what was missed in both questionnaires. On the other hand, they were not as clear about what was not relevant, and they did not comment on how questionnaires could be improved to allow them to better describe their experience.

Thus, despite an overall preference for the DSDI, neither questionnaire is better than the other in all three respects. In fact,

both questionnaires were rated high on all three scales, showing that both allow the respondents to describe their experience of sleep disturbances well.

In the author's opinion, this lack of clear cut preference for either scale may be due to differences in content. Only 30% of the questions on each questionnaire cover the same topic, which is likely due to differences in the way each was constructed (clinicians' observations versus adapted phenomenological method). Since 70% of the questions do not overlap in content, the questionnaires are more different than they are similar. Thus, all evaluative comparisons are, at best, difficult for respondents to make and for researchers to assess. On the other hand, because high ratings for both questionnaires show that both the DSDI and SDI reflect respondents' experience well overall, the author suggests content differences may reflect complementarity of content rather than merely diversity of content.

In order to determine how to improve the DSDI, the mean of each individual question was compared to the grand mean for all of the individual questions. If an individual mean fell below the grand mean, it was identified for improvement. A small standard deviation for a question, which indicated high agreement among respondents in evaluating the question, was a further indication of a need for improvement. For each question that was identified, the comments made by respondents were used as the basis for modifying the question. Table 3 shows all the individual questions on the DSDI that had means below the grand mean. Using this approach, approximately 30% of the individual questions on the DSDI were separated out as potentially problematic.

If an individual question had a mean above the grand mean (e.g. Q22, \bar{M} = 6.1; Q23, \bar{M} = 6.0) and especially if it had a small standard deviation (e.g. Q22, \underline{SD} = 1.1; Q23, \underline{SD} = 1.4), it was regarded as one of the more important questions that allowed respondents to describe their experience especially well.

In examining individual questions on the DSDI, correlations between individual questions and the postquestionnaire questions indicate which individual questions contribute to the overall ratings of the questionnaire. If such a question had a low mean, it contributed to low overall ratings of the questionnaire as a whole. If a question had a high mean, it contributed to high ratings of the questionnaire as a whole.

It is noteworthy that only seven of the 40 questions on the DSDI correlated with the postquestionnaire questions. This finding shows that there is no halo effect on the part of the respondents inasmuch as respondents did not tend to respond in the same way to all questions. Of these seven questions, five correlated with the main postquestionnaire question describing how well the DSDI reflected respondents' overall experience. Four of these questions (Q22, Q23, Q24 and Q25) had high means, indicating that these questions contribute to the overall rating of the questionnaire as describing the experience of some participants especially well. One question (Q8) had a low mean which suggests the question contributes to the overall rating of the questionnaire as describing the experience of some participants very poorly. Similarly, low means and correlation with the ratings of how much was missed or how much was not essential showed that one question (Q30) contributed to the overall rating of the questionnaire as missing its mark, and that one other question (Q12) contributed to the overall rating of including irrelevant elements.

A question identified as problematic was examined in detail for defects of either content or construction. Low means indicated that participants had rated questions as relatively ineffective in describing their experience. On the other hand, the high variance on identified questions suggested that some participants found the questions more valuable and some found it less valuable. On questions with a high variance in rating, researchers determined that an attempt would be made

to improve the question, but that it would not be eliminated. However, if a question marked as problematic showed a low mean and a low variance, the question would be eliminated because this indicated both a low rating and a high agreement between participants. Only one question (Q8) on the DSDI fulfilled this latter criterion.

In deciding how an identified question was to be changed, comments given by participants on the individual question were used as a guideline for improvement. Only a relatively few respondents tended to make comments on the open-ended part of the evaluation of a question. In the advertising field, a single person's opinion is treated as if it represents opinions of many; similarly, in the present study open-ended comments on individual questions are regarded as if the respondent was a spokesperson for the other participants who also rated the question low but did not make comments on how to improve it.

Comments of respondents showed that problematic questions had several elements in common: complexity, ambiguity, asking the respondent to make an attribution of causality, asking about a "positive" element, or asking about a "negative" element in a non-specific way. A complex question (e.g. Q37) often inadvertently asked two questions rather than one, which could leave a respondent confused or missing the point. An ambiguous question (e.g. Q32) asked for information that was not defined. Questions that ask the respondent to make an attribution of causality regarding troublesome sleep patterns (e.g. Q4) are likely problematic partly due to their high level of complexity, and partly because they ask about what brings on negative sleep patterns, which may be impossible to answer. Questions that inquire about a positive sleep pattern effect (e.g. Q9) are likely problematic because this population, as part of the dysfunction of PTSD, relates very poorly to anything of a positive nature because they tend to experience most things more negatively than the general population. Thus, such questions would be

rated low because they do not relate to their experience and are reminders of their own unhappy state.

All questions that use the words "good" or "bad" were identified as problematic questions (e.g. Q11). Responses to question 40 may provide a hint as to why a question with the word "bad" received low rating. Question 40 asked respondents to check off their feelings, and when given free rein, they tended to check off many (10 - 25) negative feelings. This suggests that they experience a wide and complex range of negative feelings, such that the descriptive terms "good" or "bad" are too limited to capture their experience, and thus, are consistently identified as problematic.

For "Yes or No" questions, comments suggested that respondents often wished to specify actual details. Individual questions that indicated respondents wished to describe more details were improved accordingly.

In summary, phenomenal validity was used as a guideline to revise the DSDI. One question was eliminated (Q8), while 12 questions were improved (Q4, Q7, Q9, Q11, Q12, Q13, Q14, Q30, Q31, Q32, Q33 and Q37). The original and revised versions of these questions are listed in full in Table 5.

Future research directions would use the revised DSDI to collect normative data on the sleep disorders of combat veterans with PTSD, as compared to the sleep patterns of combat veterans without PTSD in the larger combat veteran population. Once normative standards are established, studies need to be done to identify characteristics of sleep disorders specific to combat veterans with PTSD as compared to characteristics of other populations with sleep disorders. Such research directions would contribute to the understanding of psychologically-induced sleep disorders and aid in producing interventions for these disorders.

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Table 1

Means and Standard Deviations of Postquestionnaire Questions

Question	Questionnaire	<u>M</u>	<u>SD</u>
Describes Well	DSDI	5.92	1.24
	SDI	5.53	1.22
Missed	DSDI	2.66	1.70
	SDI	2.95	1.75
Nonessential	DSDI	5.16	1.91
	SDI	5.58	1.57

Note. N = 38. Means are ratings of questions on a 1-7 point scale. For Describes Well, a higher mean denotes greater satisfaction with the questionnaire; for Missed, a higher mean denotes more items miss the point on a questionnaire; and for Not-essential, a higher mean denotes fewer non-essential items.

Table 2

Correlations Among the Postquestionnaire Questions on Each Questionnaire

Question	Describes Well	Missed	Nonessential
DSDI			
Describes Well	--	-0.23	0.38*
Missed	-0.23	--	-0.12
Nonessential	0.38*	-0.12	--
SDI			
Describes Well	--	-0.52**	0.46**
Missed	-0.52**	--	-0.11
Nonessential	0.46**	-0.11	--

Note. N = 38; * p < .02; ** p < .001.

Table 3

Means and Standard Deviations of Individual Questions with Means Below the Grand Mean on the DSDI

	Question	<u>M</u>	<u>SD</u>
Grand Mean		5.50	1.57
	Q37	5.31	2.02
	Q9	5.29	1.82
	Q8	5.29	1.76
	Q12	5.28	1.76
	Q30	5.26	1.92
	Q32	5.25	1.67
	Q33	5.16	1.92
	Q7	5.14	1.82
	Q11	5.12	1.69
	Q4	5.12	1.76
	Q14	5.11	1.70
	Q13	5.09	1.61
	Q31	4.82	1.81

Table 4

Significant Correlations Between Postquestionnaire Questions and Individual Questions on the DSDI

Postquestionnaire Question & Individual Question	<u>r</u>	<u>M</u>	<u>SD</u>
Describes Well			
Q8	.46*	5.29	1.82
Q22	.46*	6.11	1.05
Q23	.41*	5.89	1.41
Q24	.49*	6.00	1.06
Q25	.70**	5.91	1.36
MISSED			
Q30	.52**	5.26	1.92
NONESSENTIAL			
Q12	.41*	5.28	1.76

Note. N = 38; * p < .01; ** p < .001.

Table 5

Original and Revised Questions on the DSDIQ4.^{a,c}

FROM: What I was thinking last night, just before falling asleep, kept me awake, at least for a while.

TO: As you were falling asleep last night, did you have troublesome thoughts? (Yes/No).

If so, how troublesome were they? (Not applicable or 1-5-point scale with range of from "just a little troublesome" to "extremely troublesome".

Q7.^{a,c,d,e}

FROM: My feelings before falling asleep match how I slept (good feelings with a good sleep, or, bad feelings with a poor sleep).

TO: Is this statement completely true for you: I felt positive before I fell asleep last night and I slept relatively well. (Yes/No)

Is this statement completely true for you: I felt a lot of negative emotions before I fell asleep last night and I slept relatively poorly. (Yes/No)

Q9.^{c,d}

FROM: I slept really well last night. I think I know why:

TO: I slept relatively well last night. (Yes/No)

If you slept well last night, do you know why? (Yes/No) If yes, describe why.

Table 5 continued, page 2

Q11.^a

FROM: I am feeling bad today.

TO: I have negative feelings today. (Yes/No)

Q12.^{a,b,e}

FROM: I am feeling bad today. I think its because of something that is actually going on in my life, not because of my attitudes

TO: If you have negative feelings today, do you know why? (Yes/No)
If yes, describe why.

Q13.^d

FROM: I am feeling good today.

TO: I have positive feelings today. (Yes/No)

Q14.^{a,b,d}

FROM: I am feeling good today. I think it is because of something actually going on in my life, not because of my attitudes.

TO: If you have positive feelings today, do you know why? (Yes/No)
If yes, describe why.

Q30.^{a,f}

FROM: I had a dream last night, but I can't remember what it was about.

TO: When I awoke this morning, I knew I had been dreaming, but could not remember what the dream was about. (Yes/No)

Table 5 continued, page 3Q31.^{a,d}

FROM: I had a good dream last night, but woke up feeling disturbed anyway.

TO: I had positive dream(s) last night. (Yes/No).
If so, did you awake with positive feelings? (Yes/No/Not applicable)

Q32.^{a,f}

FROM: If you had a dream last night, how distant or real did it feel? (1-7 point scale)

TO: Did you dream last night? (Yes/No)
If yes, indicate how real the dream felt to you. (5-point scale ranging from "not at all real" to "extremely real".

Q33.^{a,d,e,f}

FROM: If you had a dream last night, what feelings were going on in the dream? (Good feelings, Very good feelings, Neutral feelings, Bad feelings, Very bad feelings, Not applicable/I did not dream last night, check one)

TO: Did you dream last night? (Yes/No) If yes, what did you feel as you were dreaming? (List all feelings that apply)

Q37.^{a,c}

FROM: If you had a recurring nightmare last night, did you have feelings yesterday that might have triggered it?

TO: Did you have a recurring dream last night? (Yes/No/Not applicable, I did not dream last night)

Table 5 continued, page 4

If you had a recurring dream last night, was it a negative one (frightening, negative content)? (Yes/No/Not applicable)

If you had a recurring dream last night, was it positive in nature (made you feel good in some way)? (Yes/No/Not applicable)

If you had a recurring dream last night, do you know of anything that may have triggered it? (Yes/No/Not applicable)

If yes, state why it may have been triggered.

Note. Superscripts ^a,^b,^c,^d,^e, and ^f refer to type of problem perceived in the original question: ^acomplexity; ^bambiguity; ^casking for attribution; ^dcentered on a "positive"; ^ecentered on a "negative"; ^frespondents have no reference point or have a contradictory reference point on the issue in their experience.

Appendix A

The Daily Sleep Disturbance Questionnaire (DSDI)

DAILY SLEEP DISTURBANCES QUESTIONNAIRE

1. About how long did it take you to fall asleep last night?

0 - 5 min ____ 30 - 60 min ____
 5 - 10 min ____ 1 - 2 hrs ____
 10 - 30 min ____ More than 2 hrs ____

2. How long did you sleep last night?

0-2 hrs ____ 3-4 hrs ____ 5-6 hrs ____ 7-8 hrs ____ 9+ hrs ____

3. If you didn't sleep much last night, was there a reason?

Yes ____ No ____ Not applicable ____

4. What I was **thinking** last night, just before falling asleep, kept me awake, at least for a while.

Yes ____ No ____ Not applicable ____

5. What I was **feeling** last night, just before falling asleep, kept me awake, at least for a while.

Yes ____ No ____ Not applicable ____

6. Just before falling asleep last night, my feelings were:

____ Positive
 ____ Ordinary, unremarkable
 ____ Slightly anxious
 ____ Distraught
 ____ Very disturbed

7. My feelings before falling asleep match how I slept (good feelings with a good sleep, or, bad feelings with a poor sleep):

Yes ____ No ____

8. How "deep" was last night's sleep? (Circle one)

Very
Light

A very
deep sleep

1 2 3 4 5 6 7

9. I slept really **well** last night. I think I know why:

Yes ___ No ___

10. I slept really **well** last night. I think it was due to:

- ___ My medication
 - ___ I was more tired than usual
 - ___ I was feeling especially good
 - ___ Other (describe)
-

11. I am feeling **bad** today:

Yes ___ No ___ Not applicable ___

12. I am feeling **bad** today. I think its because of something that is actually going on in my life, not because of my attitudes:

Yes ___ No ___ Not applicable/I don't feel bad ___

13. I am feeling **good** today:

Yes ___ No ___ Not applicable ___

14. I am feeling **good** today. I think its because of something actually going on in my life, not because of my attitudes:

Yes ___ No ___ Not applicable/I don't feel good ___

15. I did **not** sleep well last night and I'm feeling bad because of it:

Yes ___ No ___ Not applicable/I slept well ___

16. I did **not** sleep well last night and it affects the way I'm feeling. This is how bad I feel:

Not at all						
bad			Somewhat			Extremely
			bad			bad
1	2	3	4	5	6	7

17. If the quality of last night's sleep was poor, which of these disturbances were going on?

(Check all that apply):

- ☐ Not applicable/I slept well
- ☐ Tossing and turning
- ☐ Anxious thoughts about the future
- ☐ Disturbed thoughts about the past
- ☐ Frequent awakenings
- ☐ Not able to fall asleep at all
- ☐ Feeling bad about myself in general
- ☐ Feeling angry at the world in general

18. Was last night's sleep the same as usual?

Yes ☐ No ☐

19. If last night's sleep was different than usual, was it:

- ☐ More calm than usual
- ☐ Longer than usual
- ☐ More disturbed than usual
- ☐ Shorter than usual
- ☐ Not applicable/slept same as usual

20. I slept well, but I woke up feeling bad anyway.

Yes ☐ No ☐ Not applicable/I did not sleep well ☐

21. I slept poorly, but woke up feeling pretty good, anyway.

Yes ☐ No ☐ Not applicable/I did not sleep poorly ☐

22. How many times did you wake up last night?

0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 or more ☐

23. If you woke up last night, approximately what time was it?

- ☐ Not applicable/I did not wake up
- ☐ pm / am
- ☐ pm / am
- ☐ pm / am
- ☐ pm / am

24. If you woke up last night, about how long did you stay awake?

- ☐ Not applicable/I did not wake up
- ☐ 15 min or less
- ☐ 30 min or less
- ☐ 1 hour or less
- ☐ 2 hours or less
- ☐ More than 2 hours

25. Something woke me up last night. It was:

- ☐ Not applicable/I did not wake up last night
 - ☐ A loud noise
 - ☐ A medical factor (illness, or pain)
 - ☐ A physical factor (bathroom needs, sneezing etc)
 - ☐ Something else (describe):
-

26. I woke up last night with a physical reaction.

(Check all the reactions you woke up with):

- ☐ Not applicable/I had no physical reaction
- ☐ Screaming, making a sound
- ☐ In a cold sweat
- ☐ Bed things highly out of place
- ☐ Find self in a location other than the bed
- ☐ Holding something as if it's a weapon
- ☐ Woke up in a strange position
- ☐ Crying
- ☐ Shaking
- ☐ Having a flashback, re-experiencing a trauma

27. Because I woke up with a physical reaction, this is how I feel (as compared to days when I don't have a physical reaction):

- ☐ Not applicable/I did not wake up physically reacting
- ☐ Feeling about the same as usual
- ☐ Stronger feelings than usual
- ☐ Feelings are much more intense than usual
- ☐ Unbelievably strong feelings

28. If you woke up last night because of a nightmare, did it keep you from getting back to sleep?

Yes ☐ No ☐ Not applicable ☐

29. I woke up last night because of a nightmare, and it took me _____ this long to get back to sleep:

<input type="checkbox"/> Not applicable	<input type="checkbox"/> 31-60 min
<input type="checkbox"/> 0-15 min	<input type="checkbox"/> > 1 - < 2 hours
<input type="checkbox"/> 16-30 min	<input type="checkbox"/> > 2 hrs

30. I had a dream last night, but I can't remember what it was about.

Yes ☐ No ☐

31. I had a **good** dream last night, but woke up feeling disturbed _____ anyway.

Yes ☐ No ☐ I did not have a good dream ☐

32. If you had a dream last night, how distant or real did it feel?

Very distant	Somewhat distant	Distant		Real	Somewhat real	Very real
1	2	3	4	5	6	7

33. If you had a dream last night, what feelings were going on in the dream?

☐ Good feelings
☐ Very good feelings
☐ Neutral feelings
☐ Bad feelings
☐ Very bad feelings
☐ Not applicable/I did not dream last night

34. If you had a nightmare dream last night, is it one you've had before?

Yes ☐ No ☐ Not applicable ☐

35. If you had a **recurring** nightmare last night, how much of the dream is the repetitive portion?

10 - 30% ☐ 30 - 60% ☐ 60 - 90% ☐ 100% ☐

36. If you had a recurring nightmare last night, was there an **incident or an event** yesterday that you think may have triggered it?

Yes ___ No ___ Not applicable ___

37. If you had a recurring nightmare last night, did you have **feelings** yesterday that might have triggered it?

Yes ___ No ___ Not applicable ___

38. I had a **nightmare** last night, but woke up feeling good, anyway.

Yes ___ No ___ I did not have a nightmare ___

39. I had a nightmare last night, and it is affecting my feelings this much:

Not at All			Somewhat			Very Intensely
1	2	3	4	5	6	7

Question 40 - How you feel this morning, as relates to how you slept last night.

*DIRECTIONS: Check 5 and only 5 FEELINGS that describe how you feel this morning.***NEGATIVE FEELINGS**

- ☐ afraid
- ☐ agitated
- ☐ alone
- ☐ angry at unwanted memories
- ☐ angry
- ☐ annoyed
- ☐ anxious
- ☐ bewildered
- ☐ bitter
- ☐ can't seem to ever take control
- ☐ cautious
- ☐ confused
- ☐ cool detachment
- ☐ dejected
- ☐ depressed
- ☐ destructive
- ☐ detached
- ☐ disagreeable
- ☐ disgusted
- ☐ disoriented
- ☐ don't give a damn
- ☐ down
- ☐ drained
- ☐ enormous fear
- ☐ exhausted
- ☐ explosive
- ☐ extremely angry
- ☐ fear I'm going crazy
- ☐ fear my inner self
- ☐ feel things happened in vain
- ☐ feel I've come a long way
- ☐ feel I need help
- ☐ feel I'll never get back on track
- ☐ feel like something is missing
- ☐ feel like I'm living a lie
- ☐ feel like "that's it"
- ☐ feel like have lost everything
- ☐ feel rejected by the system
- ☐ feeling blue
- ☐ feelings about death
- ☐ feeling tied to the past
- ☐ felt like I was somewhere else
- ☐ gloomy
- ☐ guilty
- ☐ happy and sad
- ☐ happy one second, sad the next
- ☐ hard to control emotions
- ☐ helpless
- ☐ hopeless
- ☐ hostile
- ☐ hurt
- ☐ hyper
- ☐ in a fighting mood
- ☐ in a different world
- ☐ in a panic
- ☐ in a bad mood
- ☐ intense hatred
- ☐ irritable
- ☐ jumpy

- ☐ just want to be happy
- ☐ just can't get it going today
- ☐ killing feeling
- ☐ lonely
- ☐ looking for some answers
- ☐ lost
- ☐ low self esteem
- ☐ miserable
- ☐ misunderstood
- ☐ mixed feelings
- ☐ mourning the past
- ☐ need to be close to someone
- ☐ nervous
- ☐ no patience
- ☐ no motivation
- ☐ no emotion
- ☐ not in touch with my feelings
- ☐ not happy but not sad
- ☐ not caring about much
- ☐ numb
- ☐ out of touch with feelings
- ☐ out of it
- ☐ pain
- ☐ panicky
- ☐ paranoid
- ☐ powerless
- ☐ quiet
- ☐ regret another day begins
- ☐ remorse
- ☐ restless
- ☐ scared
- ☐ seeing my life just drifting by
- ☐ sense of hopelessness
- ☐ sense of loss
- ☐ shaky
- ☐ shy
- ☐ sluggish
- ☐ sorrow
- ☐ stressed
- ☐ suffering
- ☐ tense
- ☐ terrified
- ☐ tired
- ☐ tormented
- ☐ trying hard to keep in control
- ☐ uneasy around others
- ☐ unsettled
- ☐ unsure of myself
- ☐ upset
- ☐ uptight
- ☐ very bad
- ☐ very low
- ☐ very frightened
- ☐ very sad
- ☐ very scared
- ☐ very uncomfortable
- ☐ very, very angry
- ☐ very disturbed

- ☐ very aggressive
- ☐ very hurt
- ☐ want no people around
- ☐ want to be far away in nature
- ☐ want to be happy again
- ☐ want destruction
- ☐ wish I could die
- ☐ wondering if it's worth it
- ☐ wrung out

POSITIVE FEELINGS

- ☐ accepted
- ☐ at peace
- ☐ calm
- ☐ cheerful
- ☐ content
- ☐ energetic
- ☐ excited
- ☐ feel a loving presence
- ☐ feeling good in general
- ☐ feeling good about myself
- ☐ feeling love in my heart
- ☐ feel especially great
- ☐ glad that the Lord is with me
- ☐ glad in general
- ☐ good-natured
- ☐ grateful for being alive
- ☐ happy
- ☐ in a good state of mind
- ☐ in a pleasant mood
- ☐ inclined towards work
- ☐ joy
- ☐ life must go on
- ☐ loved
- ☐ O.K.
- ☐ on the upswing
- ☐ peaceful
- ☐ pleasant
- ☐ pretty good

Appendix B

Sleep Disturbances Inventory (SDI)

SLEEP DISTURBANCES INVENTORY

1. On the average, how many hours of actual sleep do you get per night?
 - a. less than 2 hours
 - b. 2 - 4 hours
 - c. 4 - 6 hours
 - d. 6 - 8 hours
 - e. more than 8 hours
2. On the average, how many hours do you spend awake in bed?
 - a. less than 1 hour
 - b. 1 - 2 hours
 - c. 2 - 4 hours
 - d. 4 - 6 hours

IN THE PAST MONTH, HOW OFTEN, ON AVERAGE, DID YOU:

	Never	Seldom	Sometimes	Often	Very Often	Always
3. Fear going to sleep?	1	2	3	4	5	6 7
4. Lie awake at night?	1	2	3	4	5	6 7
5. Wake up and cannot get back to sleep?	1	2	3	4	5	6 7
6. Wake up tired in the morning?	1	2	3	4	5	6 7
7. Wake up with the covers torn apart?	1	2	3	4	5	6 7
8. Have restless legs in bed?	1	2	3	4	5	6 7
9. Fear the dark?	1	2	3	4	5	6 7
10. Have thoughts of past traumatic experiences while lying in bed?	1	2	3	4	5	6 7
11. Have disturbing thoughts while lying in bed?	1	2	3	4	5	6 7
12. Talk in your sleep?	1	2	3	4	5	6 7
13. Yell/shout in your sleep?	1	2	3	4	5	6 7
14. Walk in your sleep?	1	2	3	4	5	6 7
15. Wake your sleep partner?	1	2	3	4	5	6 7
16. Attack your sleep partner?	1	2	3	4	5	6 7
17. Wake up confused or disoriented?	1	2	3	4	5	6 7

18. Wake up feeling violent? 1 2 3 4 5 6 7
19. "Sleep in" in the morning? 1 2 3 4 5 6 7
20. Feel like you have not had enough sleep? 1 2 3 4 5 6 7
21. Feel like your sleep has not been restful? 1 2 3 4 5 6 7
22. Feel like you have had too much sleep? 1 2 3 4 5 6 7
23. Use street drugs to get to sleep? 1 2 3 4 5 6 7
24. Use alcohol to get to sleep? 1 2 3 4 5 6 7
25. Use prescription drugs to get to sleep? 1 2 3 4 5 6 7
26. On the average, how long does it take you to
fall asleep? _____hours _____minutes.
27. Stay awake for more than an hour after going to bed? . . . 1 2 3 4 5 6 7
28. Wake up during the night? 1 2 3 4 5 6 7
29. Wake up well before your usual wake up
time and not be able to get back to sleep? 1 2 3 4 5 6 7
30. Stay awake all night? 1 2 3 4 5 6 7
31. Stay up for more than 30 minutes? 1 2 3 4 5 6 7
32. Get out of bed? 1 2 3 4 5 6 7
33. Walk around the house? 1 2 3 4 5 6 7
34. Go out of the house? 1 2 3 4 5 6 7
35. Fear going back to sleep? 1 2 3 4 5 6 7
36. On a typical night, how many dreams do you remember? _____
37. Have dreams that you remember? 1 2 3 4 5 6 7
38. Have frightening dreams? 1 2 3 4 5 6 7
39. Have dreams that are an exact repetition of
a past traumatic experience? 1 2 3 4 5 6 7
40. Have dreams that are similar but not identical
to a past traumatic experience? 1 2 3 4 5 6 7
41. Have dreams that are about things that are
related to but very different from a past
traumatic experience? 1 2 3 4 5 6 7

42. Have dreams unrelated to a past traumatic experience? 1 2 3 4 5 6 7
43. Wake up from a frightening dream and are unable to remember the content of the dream? 1 2 3 4 5 6 7
44. Awaken from a frightening dream and cannot remember the content of the dream? 1 2 3 4 5 6 7
45. After awakening from a frightening dream, go back to sleep within 30 minutes? 1 2 3 4 5 6 7
46. After awakening from a frightening dream, stay awake for more than 30 minutes? 1 2 3 4 5 6 7
47. Have recurring dreams that are related to a past traumatic experience? 1 2 3 4 5 6 7
48. Have recurring dreams that are unrelated to a past traumatic experience? 1 2 3 4 5 6 7
49. On the average, how many naps do you take during the day? _____
50. Feel tired during the day? 1 2 3 4 5 6 7
51. Feel tired in the morning? 1 2 3 4 5 6 7
52. Feel tired in the afternoon? 1 2 3 4 5 6 7
53. Feel tired in the evening? 1 2 3 4 5 6 7
54. Take naps during the day? 1 2 3 4 5 6 7
55. Rest during the day (lie down but do not sleep)? 1 2 3 4 5 6 7
56. Feel that tiredness affects your job? 1 2 3 4 5 6 7
57. Feel that tiredness affects your family life? 1 2 3 4 5 6 7
58. Feel that tiredness affects your mood? 1 2 3 4 5 6 7

Appendix C

Postquestionnaire

POSTQUESTIONNAIRE

PLEASE ANSWER EVERY QUESTION. DO NOT LEAVE BLANKS.

Before answering, please go over your journal entry describing your experience of sleep. This may help you answer the questions. Please answer as fully as possible. What you say is very important.

1. How well did this questionnaire allow you to describe your experience of sleep and its effects on you? (Circle one number only):

Not at all							Completely
	1	2	3	4	5	6	7

- 2.(a) To what extent did the questionnaire miss aspects of your experience of sleep and its effects on you? (Circle one number only):

It missed nothing							It missed everything
	1	2	3	4	5	6	7

- (b) If you think something was missed, what was it?

- 3.(a) How much of this questionnaire asked about things that are NOT ESSENTIAL to your experience of sleep and its effects on you? (Circle one number only):

None of it was essential							All of it was essential
	1	2	3	4	5	6	7

- (b) If you think something was not essential, what was it?

VITA

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Born October 21, 1947 in a post World-War II refugee camp in Hanover, West Germany, Stase Michaels immigrated to Canada with her family in 1948. She completed her Bachelor of Arts Degree at McGill University in Montreal in 1968. Continuing her education as a mature student, she completed a Masters Degree in Transpersonal Studies at Atlantic University in 1991.

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